Bronchoesophageal Fistula Resolution via Bronchial Stenting in a Case of Metastatic Melanoma to the Mediastinum

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Background

- Esophageal stenting is the foundation of treatment for malignant bronchoesophageal fistula (BEF).
- Bronchial stenting can used concurrently if airway compression or compromise is present; it is seldom used alone.

Case Presentation

- The patient is a 48-year-old female with known metastatic posterior mediastinal 5.3cm melanoma, now complicated by endobronchial tumor compressing the esophagus. She underwent several rounds of laser ablation and esophageal stenting, requiring multiple exchanges for stent migration and recurrent impactions.
- During one esophagoscopic stent exchange, a new 8mm esophageal-airway fistula was identified at 23cm from the incisors **(Figure 1)**. A 23mm x 100mm covered, metal EndoMaxx (Merit Medical) esophageal stent was placed. Subsequent bronchoscopy confirmed a fistulous connection with the left mainstem bronchus.
- The patient remained nil per os with jejunostomy tube feeds for two weeks. She returned to the hospital two weeks after discharge with computed tomography (CT) evidence of post-obstructive left lower lobe pneumonia and esophageal stent impaction **(Figure 2)**. The stent was removed, and a four-day follow-up esophagram demonstrated no leak.
- Despite a week of targeted antibiotic therapy, her pulmonary symptoms persisted. Bronchoscopy demonstrated a pinpoint stricture in the left mainstem bronchus. The stricture was laser ablated and a 12mm x 30mm Aero (Merit Medical) covered metal bronchial stent was placed. Repeat esophagram four days later demonstrated patent BEF and distal migration of the bronchial stent. The stent was bronchoscopically upsized to a 12mm x 40mm Aero stent. The patient defervesced with marked symptomatic improvement by postoperative day three and was discharged with IV antibiotic therapy.
- Three-week esophagram demonstrated no fistulous leak **(Figure 3)**. The bronchial stent was removed three months after placement. Follow-up esophagram confirmed BEF resolution. Interval six-week CT of the chest demonstrated no airway stricture and resolution of her pneumonia. She had no recurrence of BEF after four months of monitoring.

Imaging

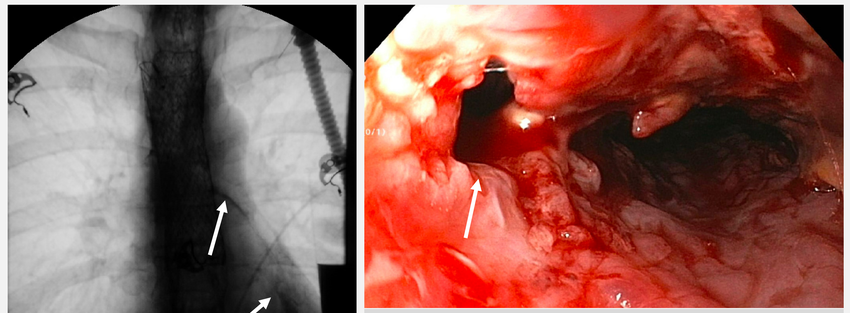
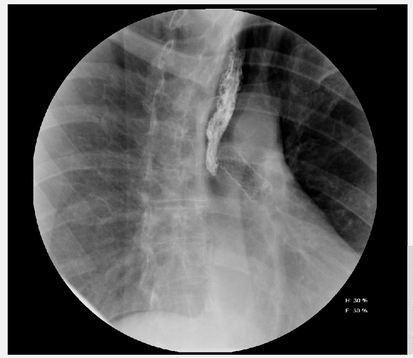


Figure 1: BEF on esophoagram (left; arrows) and endoscopy (above; arrow)

Figure 2 →: CT of esophageal stent impaction with narrowed (arrow) left mainstem bronchus





← **Figure 3:** Barium esophogram demonstrating bronchial stent successfully occluding BEF leak

Takeaway: *Bronchial stenting alone is an option when esophageal stenting fails.*